



LIMITED ACCESS TO FACIAL FEMINIZATION GEOGRAPHICALLY DESPITE NATIONWIDE EXPANSION OF OTHER GENDER AFFIRMING SURGERIES

Sacha C. **Hauc**, BS, BA, MPH¹; Kirby L. **Mateja**, BS¹; Aaron S. **Long**, BS¹; Jean Carlo **Rivera**, BS¹; Joshua Z. **Glahn**, BA¹; BS¹; Thayer **Mukherjee**, MD¹; Jackie **Oh**, MD¹; Michael **Alperovich** MD, MSc¹

Section of Plastic and Reconstructive Surgery, Department of Surgery, Yale University School of Medicine



What We Learned

From 2008-2017, gender affirming surgery cases increased nationwide while the average cost of surgery rose steeply.

Facial feminization surgery cases were primarily in the Western and Northeast United States and largely self-pay.

Despite high cost, roughly 18% of transgender women in our sample received FFS, highlighting the importance of FFS in gender transition.

Background

- Facial feminization surgery (FFS) is an integral aspect of gender affirming surgery (GAS) for individuals seeking to align secondary sex characteristics with their expressed gender identity. Despite robust evidence for its role in helping treat gender dysphoria, trends, and prevalence of FFS remain unknown. We sought to examine trends in GAS and FFS and investigate the payer status of facial feminization procedures in the United States.

Aim

- We analyzed ten years of nationally representative data on inpatient GAS and the most recent data (2015-2017) on FFS to characterize trends in regional variability, procedural cost and primary payer status.

Methods

- Data analysis relied on the National Inpatient Sample (NIS), a large publicly available all-payer inpatient care database in the United States.
- This study evaluated 10 years of available NIS data from 2008-2017 comprising approximately 80 million hospitalizations.
- Inclusion criteria selected for patients with International Classification of Diseases Ninth or Tenth (ICD-9/10) diagnostic codes for transgender- 30285 (gender identity disorder in adolescents or adults), 3025 (trans-sexualism with unspecified sexual history), 3026 (gender identity disorder in children) and F641 (gender identity disorder in adolescence and adulthood) , F642 (gender identity disorder of childhood), F648 (other gender identity disorders), and F649 (gender identity disorder, unspecified).
- Patients classified as having received gender affirming surgery included any patient who underwent either top surgery, bottom surgery, or both. Our analysis consisted of a weighted dataset of 33,135 patients of which 3,015 underwent GAS.

Statistical Methods

- For continuous variables, outliers were excluded if they were found to be outside the 95th percentile of data points. Patient and hospital characteristics were analyzed using a student's t-test for continuous variables, a chi-square test for categorical variables, and individual predictor variables were evaluated based on Wald χ^2 statistic. All p-values within the model were two-tailed.

Results

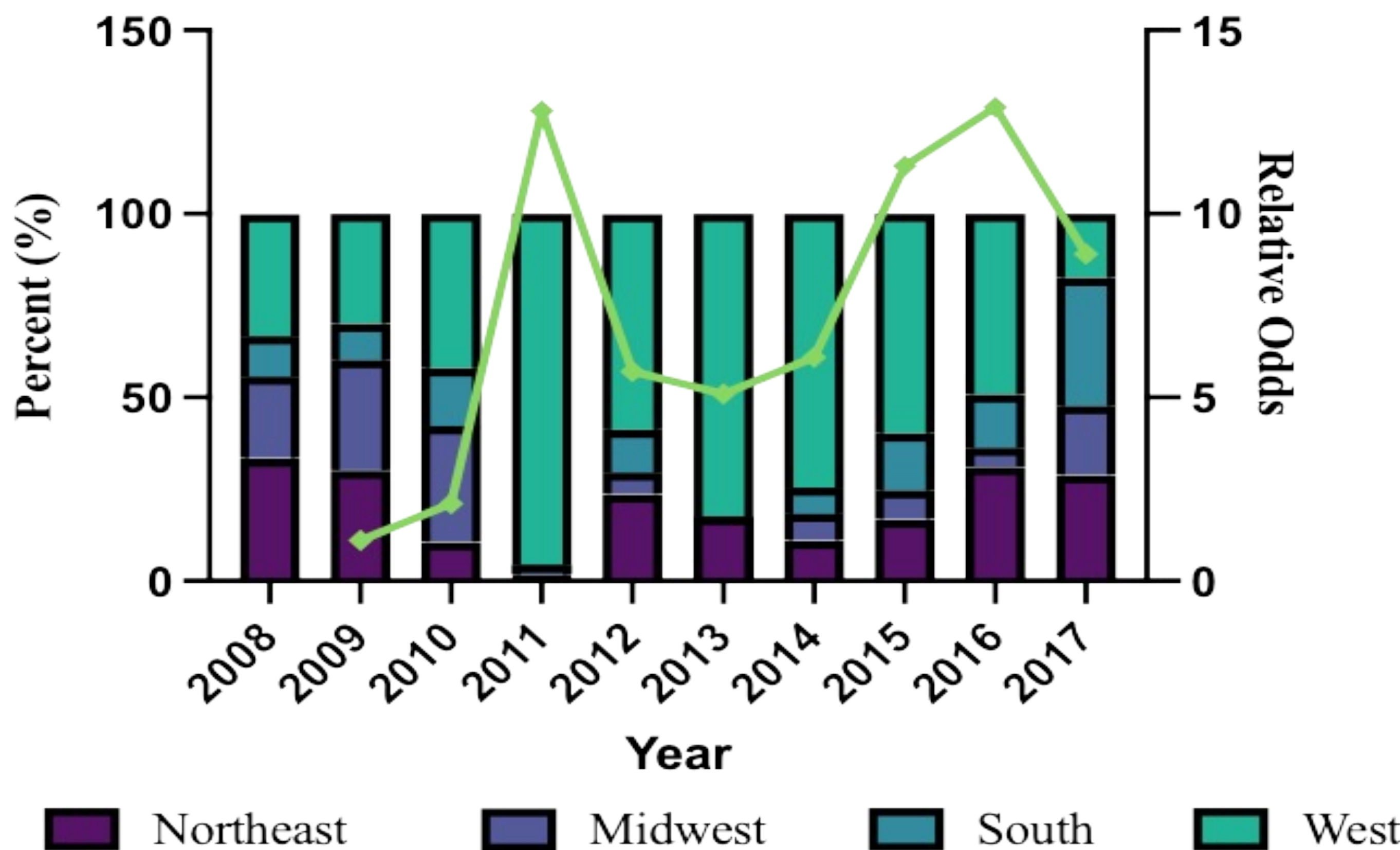
Facial Feminization Data

- From 2015-2017, 110 out of 1,215 (9.1%) discharges for GAS included facial feminization surgery. 18% of patients undergoing male to female transition received FFS.
- Most FFS occurred in the Western Region (55, 50%), followed by the Northeastern Region (35, 31.8%), Southern Region (15, 13.6%) and Midwestern Region (5, 4.8%) ($p = 0.015$).
- By primary payer status, 40 (36.4%) FFS cases were self-pay, 35 (31.8%) were Medicaid, and 30 (27.3%) were paid by private insurance ($p < 0.0001$). Most FFS discharges were from urban non-teaching hospitals (100, 90.9%) ($p = 0.1033$).

General Gender Affirming Surgery Data

- An increase in GAS over time was observed between 2008 and 2017 with peaks in 2011 and 2016
- From 2008 to 2017, the gap between age for top and bottom surgeries narrowed, and the median age of all patients receiving GAS was 31 years old in 2017
- Median cost of GAS rose from \$13,657 in 2008 to a peak of \$72,640 in 2015, before falling to \$50,789 in 2017. From 2015-2017, the average cost of GAS was \$64,102 with top surgery costing an average of \$63,747 and bottom surgery an average of \$65,509

Figure 1. GAS by Region from 2008-2017



Discussion

- Our data showed a rising number of gender-affirming top and bottom procedures. While GAS prior to 2010 was largely confined to the Northeastern and Western United States, our findings demonstrate an increase in cases in the South and Midwest by the middle of the decade.
- Our results show that costs for GAS procedures have dropped and stabilized since peaking in 2014. One factor contributing to regional expansion and cost stabilization of GAS nationwide is likely the enactment of the Affordable Care Act (ACA) and recent state policy changes banning discrimination in insurance coverage on the basis of sex or gender identity.
- FFS data was studied for the 2015-2017 period, notably, 18% of transgender women in our GAS sample received FFS. This finding suggests substantial patient demand for FFS and highlights the important role it plays in gender affirmation.
- Our results demonstrate significant regional disparity in FFS with over 80% of procedures occurring in the Western and Northeastern United States. This trend may be due to wider insurance coverage and more inclusive state laws regarding FFS in these regions.

Table 1: Facial Feminization Demographics

Variable	% (N=110)	p
Race		0.1658
White	66.67 (70)	
Black	23.81 (25)	
Hispanic	*	
Asian	4.76 (5)	
Native American	4.76 (5)	
Region		0.0146
North-East	31.82 (35)	
Midwest	4.55 (5)	
South	13.64 (15)	
West	50 (55)	
Hospital Bed Size		0.0164
Small	40.96 (45)	
Medium	36.36 (40)	
Large	22.73 (25)	

Primary Payer		<0.0001
Medicare	*	
Medicaid	31.82 (35)	
Private	27.27 (30)	
Self	36.36 (40)	
Other	4.55 (5)	
Location/Teaching Status		0.1033
Rural	*	
Urban Teaching	9.09 (10)	
Urban Non-teaching	90.91 (100)	
Income Status		0.4398
Lower 25%	40.00 (40)	
50%	15 (15)	
Next 75%	20 (20)	
Top 25%	25 (25)	
Percentage of patients with FF	18 (110)	<0.0001
Number of Procedures (median)	5	<0.0001
Cost (mean), \$	89,176	